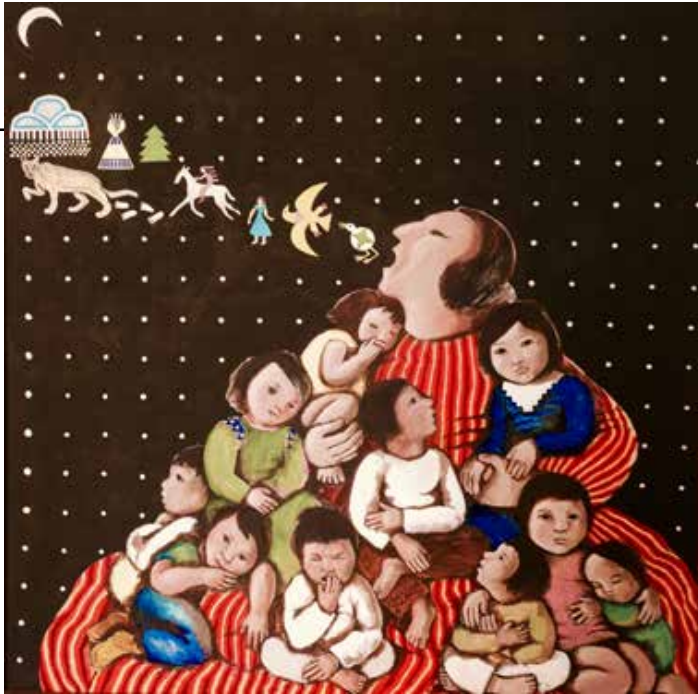


Fragile Infant Forums for Implementation of IFCDC Standards: Aiming for Zero-Separation of Parents and Infants in the ICU and Beyond

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“Parent-infant attachment begins long before birth. (1) Formation of strong parent-infant attachments is the basis for the baby’s short- and long-term positive cognitive and emotional development and positive mental health for the parents. (2) Yet, when a baby is born early or has physiologic instability after birth, one of the first events that occurs is separation from the parents for ease of management of nursing and medical interventions in an intensive care unit (ICU).”

Introduction:

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born early or has physiologic instability after birth, one of the first events that occurs is separation from the parents for ease of management of nursing and medical interventions in an intensive care unit (ICU). While adverse effects are not truly the intended results, separation has the potential to be traumatic—particularly if the baby is subjected to pain or distress or if the separation continues for days, weeks, or even months. (2,3) Moreover, separation can be as damaging for the parent as it is for the baby. (2,4) As new evidence continues to emerge, a greater understanding of how parent-infant separation has the potential for adverse short- and long-term effects on both baby growth and development, as well as parent mental health and parent-infant attachment, is becoming increasingly apparent.

This short report will explore how the potential adverse childhood event of being born preterm or with physiologic instability with resulting separation from parents can have lasting effects beyond the immediate need for medical support. (4) Potential strategies to best mitigate these effects while the baby and family are in the ICU environment will be discussed. Finally, strategies that align with Infant and Family-Centered Developmental Care (IFCDC) standards will be recommended. (5) will be offered. For recommended care practices to become standardized practice guidelines and, ultimately, routine care practices in the ICU, understanding the “why” for when and what interventions need to occur is a preliminary step in making them happen consistently. Current evidence indicates that the stress of separation of babies and their parents results in potentially adverse outcomes. Therefore, aiming for zero-separation of parents and babies in the ICU is a care practice that must be implemented in meaningful ways.

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What do we know about Adverse Childhood Experiences (ACEs)?

In their 1998 seminal work, Felitti and colleagues coined the term adverse childhood experiences (ACEs) and developed a 10-item ACE-Study Questionnaire to measure types of childhood traumas that occur prior to the age of 18, including abuse (i.e., physical, emotional, sexual, and neglect) and familial-based trauma (e.g., history of familial domestic violence and incarceration. (6,7) According to the National Child Traumatic Stress Network, ACEs can also be present in those who experience neighborhood violence, refugee adversity, and terroristic threats (7), as well as bullying and involvement with the child welfare system. (8)

The prevalence of ACEs and their effect on health outcomes

is becoming more apparent as a public health consideration. Mounting evidence suggests that individuals who experience four or more ACEs are at increased risk for chronic conditions such as diabetes, substance use disorders, and heart disease. (7,9,10) Endeavors to combat the health disparities that arise from ACEs cost society billions of dollars annually. (9) Evidence indicates that a small reduction (10%) in addressing ACEs would save approximately \$56 billion in health-related expenses within the United States annually. (9)

“In recent years, there has been increased attention centered on the relationship between ACEs and the risk for developmental difficulties during childhood and into adulthood. (10) Developmental delays, educational difficulties, and poor school engagement, as well as mental health conditions such as anxiety and depression, have been documented. (11,12)”

In recent years, there has been increased attention centered on the relationship between ACEs and the risk for developmental difficulties during childhood and into adulthood. (10) Developmental delays, educational difficulties, and poor school engagement, as well as mental health conditions such as anxiety and depression, have been documented. (11,12) Exposure to adversity and its effects can become evident in young children within the first three years of life. (11,12) Furthermore, evidence shows that approximately half (46%) of school-aged children and adolescents under the age of 18 years suffered at least one ACE. (7,13) This finding supports the importance of screening for ACEs in the pediatric setting and making referrals to appropriate support services. (11,12)

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Why do we believe ACEs and ICU experiences are related?

Experiences in intensive care, such as painful procedures, are well documented, are known to be traumatic for the baby, and impact both short and long-term outcomes. Admission to intensive care often includes the separation of babies and their parents and can also be considered a traumatic experience. Acknowledging that parent-infant separation is traumatic to the baby can be considered a foundation for identifying early adverse childhood events in hospitalized babies. (4) While we acknowledge that separation occurs for many reasons and not all these instances

can be prevented, healthcare providers in the ICU need to recognize the potential of separation being an adverse event and aim for zero separation of parents and babies.

For many years in the United States and other countries worldwide, the goal has been to make ICUs more accessible and welcoming to families. Strategies have included twenty-four-hour access for parents, family-centered caregiving, and implementation of single-room designs, to name just a few. While these strategies have been implemented widely and mostly successfully, they are not implemented in all ICUs or consistently for all babies and families. More of these types of interventions are being systematically studied and routinely implemented into practice to mitigate potential short- and long-term adverse effects. (14) Yet more research is still needed.

What are Benevolent Childhood Experiences (BCEs)?

While the concerns for ACEs are profound and apparent, a counterpoint has emerged in recent years. Conceived by Dr. Angela Narayan in 2018, Benevolent Childhood Experiences (BCEs) contrast with ACEs and represent positive events that can serve as a primer for resiliency from infancy into adulthood. (15,16) Like the ACE-Study Questionnaire, the BCE 10-item questionnaire can assess events that occur in the first 18 years of life and can be conducted in clinical and research settings. (15–17) Utilizing a strengths-based approach, BCEs encompass concepts of safety, security, and positive and predictable characteristics of childhood. (15,16) supportive parenting, positive peer relationships, and access to and utilization of safe and supportive community resources are considered positive aspects of childhood resilience. (15,16)

“Associations exist between the provision of BCEs and the potential to mitigate ACEs (17–19); however, the damaging effects of ACEs are more well-known and historically have received more attention than BCEs. (20) Moreover, considerable concerns exist about opportunities to counteract ACEs’ harmful effects; countering ACEs is not as easy as it might seem since ACEs can be life-long and a single intervention at a specific time point seldom can correct long-term effects.”

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lasting effects into adulthood. (16,21,23)

How can the increased occurrence of BCEs in the NICU mitigate the long-term effects of NICU ACEs?

Infants who have a NICU admission are at increased risk for long-term neurologic sequelae. At no other time in a child's life does the brain develop so swiftly, and the environment around this developing brain matters. (24) Supporting infant brain development is vital in the NICU and throughout infancy. While supportive medical interventions and shorter stays can decrease these risks, engaging the family in caregiving in the NICU can complement the medical care to mitigate the consequences of hospitalization and promote their baby's brain development.

“Strategies for creating positive BCEs and fostering resilience for babies and families in the ICU are interventions that facilitate family engagement and decrease separation. These interventions can potentially have a buffering effect for both Infant and parent, mainly when separation seems inevitable given the circumstances of admission to the ICU; for example, when the mother is ill and cannot easily be with her baby or if the family lives a great distance from the ICU.”

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“Regardless of whether the infant is born preterm or with birth-related physiologic instability, several evidence-based strategies can be employed to support these infants and their families best. While these neuroprotective strategies are often only employed for preterm infants and their families in the NICU, they are efficacious for all infants and families who experience ICUs. (24–26)”

Promoting BCEs by using IFCDC standards:

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The *Standards, Competencies, and Best Practices for Infant and Family-Centered Developmental Care (IFCDC Standards) in the Intensive Care Unit* (5) provide best practices (domains) and competencies that interprofessionals and families can utilize to provide individualized, environmentally protective, and nurturing care within the context of the ICU. By acknowledging and demonstrating the value of integrating the baby and family into care, healthcare professionals can help create an ICU environment supportive of BCEs. While an exhaustive list of the applicability of the IFCDC Standards to the construct of BCEs is not included, several examples for consideration can be found below.

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The most critical BCE strategy for these infants and their families is to decrease the separation of parents and high-risk infants. Like all parents, high-risk infants must be encouraged to hold their infant as soon as possible after birth, including skin-to-skin care (SSC) to facilitate bonding and attachment whenever feasible (*IFCDC Domain 4*). (27) Holding and SSC have many positive benefits, including activation and sustaining lactation, decreasing inflammation and risks for infection, increasing alertness and cognitive growth in the infant, and bonding and attachment for the dyad. (27) When parents are present and/or holding their baby, they must also be encouraged to speak directly to the infant. (28) It can be overwhelming for parents to consider talking to their infant like they would in their home, yet these interactions are essential to normal growth and development for the infant and satisfying for parents. One strategy to encourage parents to talk with their infants is providing books they can read to their infants.

In addition, the provision of mother's milk (MOM), either through milk expression or breastfeeding, needs to be encouraged (*IFCDC Domain 6*). (29) Mother's own milk provides many sensory reminders for the attachment relationship and nutritional benefits that cannot be replicated through other types of milk. Since babies in intensive care are already a vulnerable population, these benefits cannot be ignored.

Examples of the application of the IFCDC Domains as BCEs:

Domain 4: Skin-to-skin contact with intimate family members

- **Skin-to-Skin Contact, Standard 1:** Parents shall be encouraged and supported in early, frequent, and prolonged skin-to-skin contact (SSC) with their babies.
 - **Competency 1.5:** Parents should be provided with comfort, including a) safe and comfortable seating or reclining accommodations that are readily available at baby's bedside; b) support pillows; c) secure wraps to support baby; d) a mirror to see baby's face; e) hydration and nutrition for parents as needed; f) privacy, if desired (in private rooms or by privacy screens); and g) a quiet, therapeutic environment for being with their baby.
 - **Competency 1.6:** A healing environment that protects the baby's physiologic and behavioral stability shall be maintained during SSC including a) appropriate room temperature with the absence of drafts; b) consistently low sound levels; c) avoidance of bright lights with individualized light as needed to assess baby; d) prominence of parent's scent (free of strong scents including perfumes and tobacco); e) proximity to mother's breast to support smell and taste (when a mother providing milk is holding her baby); and f) gentle touch and handling to protect baby's immature vestibular system.
 - **Competency 1.7:** Parents shall be supported in recognizing their baby's behavioral communications of stress and relaxation during SSC.
 - **Competency 1.8:** Parents shall be encouraged to support their baby in SSC during painful procedures whenever possible.
 - **Competency 1.9:** Parents shall be encouraged to have vocal and singing interactions with their baby during SSC to enhance parental-infant connections, reduce parental anxiety, increase newborn vocal/listening interactions, and improve the baby's autonomic stability.

Domain 6: Management of feeding, eating, and nutrition delivery

- **Feeding, Standard 4:** Mothers shall be supported to be the primary feeders of their baby.
 - **Competency 4.1:** ICU professionals shall actively work with m/others to assist them to feel confident and competent with feeding their babies.
 - **Competency 4.2:** Where relevant/necessary, bottle feeding shall be conducted by the m/other when she/he is present rather than by ICU professionals so that the m/other is supported to be the expert. M/others or their designees shall be identified as the primary provider(s) of sustenance and nurturing.
 - **Competency 4.3:** Professionals shall support the parents' understanding of their baby's communicative behaviors while guiding and supporting the feeding experience.

<https://nicudesign.nd.edu/nicu-care-standards/>.

Parents need to be encouraged to get to know how their baby communicates through their behavior so they know *when* best to interact and *how* best to console and comfort the baby (See Box 5). (4,25) For a variety of reasons, babies in the intensive care unit can be difficult to console, resulting in parents feeling uncomfortable and less competent. As such, all health professionals need to consider how their behaviors and interactions make families feel comfortable and welcomed—or not—in the ICU environment. (3) Many parents may feel incompetent, given the confidence they see in ICU professionals. They may believe everyone can see and feel “judged” for their perceived incompetence. Parents may interact less or be less present or engaged because of their sense of incompetence, thus further increasing their separation from the baby. (4,25,29)

The principles of Infant and Family-Centered Developmental Care in which consideration of BCEs is essential to implementation include:

- Baby as a competent Interactor
- Neuroprotection of developing brain
- Individualized care
- Family involvement
- Environmental protection
- Infant mental health

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Conclusions:

How families are treated from admission to the infant's discharge is the responsibility of every health professional in the ICU. The ongoing practices and interactions that families experience can influence the infant's physiological stability and the long-term effects on the infant's and parent's health, attachment relationships, and psychological outcomes. Recognizing the impact of separation of babies and their parents as an Adverse Childhood Event (ACE) is central to implementing practices that support healthy outcomes. While separation can seem inevitable in the environment of the ICU, every opportunity must be taken to aim for zero separation of parents and infants to reduce the risk of ACEs and implement Benevolent Childhood Events (BCEs), which are known to promote resilience and positive outcomes. ICU health professionals cannot make this happen without a team approach where all team members believe they can provide family-centered care, including keeping infants and their parents together at all times. (30) Making family-centered caregiving and zero-separation a top priority means these strategies must be foundational to and a primary aspect of the mission of the NICU.

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